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Claims

[c1] 1. A headsail for a sailing boat, the headsail comprising:
(a) a luff rope further comprising a core of parallel filaments of high-tenacity polyester and a tightly braided polyester cover, and affixed in proximity to a luff of the headsail;
(b) an upper marine eye affixed to an upper end of the luff rope, and a lower marine eye affixed to a lower end of the luff rope; and
(c) a length of shrink-wrap tubing disposed about a shank of each marine eye, and firmly shrunk about both the shank of the corresponding marine eye, and about the luff rope in proximity to the shank.

[c2] 2. The headsail of claim 1, further comprising a rotating drum affixed to the lower marine eye.

[c3] 3. The headsail of claim 2, wherein each marine eye is fabricated from a rod of material comprising aluminum, and comprising a flattened head area with a transverse hole formed therewithin, and a shank, the shank having a coaxial hole formed therewithin, and wherein an end of the luff rope is inserted into the coaxial hole.

[c4] 4. The headsail of claim 3, wherein the luff rope is attached at each end to a marine eye by swaging.

[c5] 5. The headsail of any of claims 1 through 4, wherein the drum further comprises (a) an upper fitting member affixed at its upper end to the bottom of the luff rope, and affixed at its lower end to a drum body;
(b) a bearing assembly comprising an upper race, and disposed within the drum body which comprises a lower race, the bearing assembly suspended between a plurality of lower balls disposed between the upper race and the lower race, and a single upper ball; and
(d) means for restricting an excursion of the upper race relative to the lower race,
so that the lower balls will be prevented from distortion beyond a breaking point.

[c6] 6. The headsail of claim 5, wherein the means for restricting the excursion of the upper race relative to the lower race further comprises a stop surface integrally formed on the bearing assembly, said stop surface substantially parallel to the upper race, and which engages the lower race when sufficient tensile stress is applied to the drum.

[c7] 7. A method for fabricating a headsail for a sailing boat, the method comprising:

(a) affixing a luff rope in proximity to a luff of the head-sail, the luff rope further comprising a core of parallel filaments of high-tenacity polyester and a tightly braided polyester cover;

(b) affixing an upper marine eye to an upper end of the luff rope;

(c) affixing a lower marine eye to a lower end of the luff rope; and

(c) shrinking a length of shrink-wrap tubing about both the shank of the corresponding marine eye, and about the luff rope in proximity to the shank.

[c8] 8. The method of claim 7, further comprising affixing a rotating drum to the lower marine eye.

[c9] 9. The method of claim 8, wherein each marine eye is fabricated from a rod of material comprising aluminum, and comprising a flattened head area with a transverse hole formed therewithin, and a shank, the shank having a coaxial hole formed therewithin, and wherein an end of the luff rope is inserted into the coaxial hole.

[c10] 10. The method of claim 9, further comprising affixing the luff rope at each end to a marine eye by swaging.

[c11] 11. The method of any of claims 7 through 10, wherein the drum further comprises (a) an upper fitting member

affixed at its upper end to the bottom of the luff rope, and affixed at its lower end to a drum body;

(b) a bearing assembly comprising an upper race, and disposed within the drum body which comprises a lower race, the bearing assembly suspended between a plurality of lower balls disposed between the upper race and the lower race, and a single upper ball; and

(d) means for restricting an excursion of the upper race relative to the lower race,

so that the lower balls will be prevented from distortion beyond a breaking point.

[c12] 12. The method of claim 11, wherein the means for restricting the excursion of the upper race relative to the lower race further comprises a stop surface integrally formed on the bearing assembly, said stop surface substantially parallel to the upper race, and which engages the lower race when sufficient tensile stress is applied to the drum.

[c13] 13. A drum for use in furling a headsail of a sailboat, the drum comprising:

(a) an upper fitting member affixed at its upper end to the bottom of the luff, and affixed at its lower end to a drum body;

(b) a bearing assembly comprising an upper race, and disposed within the drum body which comprises a lower

race, the bearing assembly suspended between a plurality of lower balls disposed between the upper race and the lower race, and a single upper ball; and

(d) means for restricting an excursion of the upper race relative to the lower race,

so that the lower balls will be prevented from distortion beyond a breaking point.

[c14] 14. The drum of claim 13, wherein the means for restricting the excursion of the upper race relative to the lower race further comprises a stop surface integrally formed on the bearing assembly, said stop surface substantially parallel to the upper race, and which engages the lower race when sufficient tensile stress is applied to the drum.

[c15]